

Acute Toxicity to Ladybird Beetle (Non-guideline)

MRID: 45455002

Chemical Name: Pyraclostrobin

PC Code: 099100

EPA DP Barcode: D418951

Test Material: BAS 500 00F

Purity: Pyraclostrobin (24%)

Citation: Kemmeter, F. 1999. BAS 500 00F: acute toxicity to the ladybird beetle, *Coccinella septempunctata* L. (Coleoptera, Coccinellidae); life cycle test (extended laboratory test). Lab project number: 99238/01-NECS: 1999/11533. Unpublished study prepared by GAB Biotechnologie GmbH & IFU Umweltanalytik GmbH.

Study Summary: Ladybird beetles (*Coccinella septempunctata*) were exposed to pyraclostrobin during each stage of their life cycle. The treatments were: negative control, positive control on larvae only (dimethoate – 0.077 lb ai/A), and pyraclostrobin (0.007 lb ai/A and 0.058 lb ai/A). There were three exposures at each application rate; eggs and adults were treated directly with the test substance while larvae were exposed via dried residues on bean plants. For the first exposure, at least 300 eggs per treatment group (split amongst four replicates) were sprayed directly with pyraclostrobin. Depending on the emergence rate, the second exposure included a maximum of 80 two-to three-day old larvae (four replicates of 20) per treatment. The larvae were exposed to dried residues on bean plants. The third exposure occurred within 10 days of adult emergence. There were two to three replicates, depending on the number of adults that had developed from the exposed larvae.

Egg hatch success, pre-imaginal mortality, adult mortality, and reproduction were quantified during the experiment (Table 1). There were no statistically significant differences between the pyraclostrobin treatment groups and the negative control.

Table 1. Ladybird beetle observations after exposure to treatments

Endpoint	Pyraclostrobin		Negative Control	Positive Control (Dimethoate)
	3 apps at 0.007 lb ai/A	3 apps at 0.058 lb ai/A		1 app at 0.077 lb ai/A
Egg mortality (%)	11.9	17.8	16.9	N/A
Pre-imaginal mortality (%)	17.50	12.50	23.75	100.00*
Adult mortality (%)	17.26	7.62	23.53	N/A
Reproduction (number of fertile eggs per female per day)	15.61	19.82	20.45	N/A

*Statistically significant ($p < 0.05$) Fisher's exact test

N/A- not assessed

Validity Criteria: The study met the criteria of less than 35% pre-imaginal mortality in the control group and greater than pre-imaginal 50% mortality in the positive control group.

Classification: Supplemental because the non-guideline study does not fulfill a data requirement.

Reviewer Comments:

- This study was conducted according to Good Laboratory Practices (OECD) and the guidance document for regulatory testing procedures for pesticides with non-target arthropods – ESCORT Workshop 1994.
- The study is scientifically valid.
- This study is useful for qualitative purposes and demonstrates no effects on individual life stages and over the life time of ladybird beetles at application rates of 0.007 lb ai/A and 0.058 lb ai/A. These rates are below the highest registered application rates of pyraclostrobin.

Primary Reviewer: Meghan Radtke, Ph.D.
Biologist, USEPA/EFED/ERB-1

Signature:

Date:

Meghan Radtke
5/16/14

Secondary Reviewer: Robin Sternberg
Wildlife Biologist, USEPA/EFED/ERB-1

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